

0070065

**Notice of Construction
And
Minor Permit Modification Request
Permit Number: 00-05-006**

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For

EDMC

Operation of Two Diesel Engines

**High Bay Testing Facility
Pacific Northwest National Laboratory
300 Area
Hanford Site**

May 2006

**Submitted by the
US Department of Energy
Pacific Northwest National Laboratory
Richland, Washington**

Executive Summary

The High Bay Test Facility (336 Building) is operated by Pacific Northwest National Laboratory (PNNL) for the U.S. Department of Energy (DOE) to perform large scale testing and research activities to support the Hanford Site Clean Up. The Hanford Waste Treatment and Immobilization Treatment Plant (WTP) project is currently testing mixing and transfer systems in the 336 Building.

The WTP plans to use pulse jet mixer (PJM) technology and air sparging for tank-mixing applications requiring solids suspension, fluid blending, and the release of gases generated *in situ* by radiolysis and thermolysis (note: these gases will not be generated during the proposed testing). The mixers used in this technology are driven via jet pumps, which use compressed air as the motive force. The compressed air is to be supplied with compressors.

The new sources will consist of two rented 1600 CFM, 150 PSI air compressors to provide compressed air for the test. Past rentals of compressors rated at this level have been driven by a 560 HP Cummins Model QSX15 C600 diesel engine. The emission estimates below assume that the emission factors for future rentals with similar engines will be the same as for the prior rental. If the emission factors are greater than shown below, the information will be updated.

The compressors will be used for periodic research tests upon approval for a combined total of 2000 hours of operation per year.

Operation of the compressors will meet applicable emission standards, which include the WAC 173-400-040 General Standards for Maximum Emissions and WAC 173-400-050 Emission Standards for Combustion and Incineration Units. The compressors will not be located in a nonattainment area, will not impact a nonattainment area, and will not cause a violation of applicable ambient air quality standards. Best available control technology (BACT) will be met by using compressors with engines meeting the requirements of 40 CFR 89. The calculated emissions from both compressors combined, and the exhaust concentrations regulated under WAC 173-400-50(1), are shown in Table S.1.

Table S.1 Diesel Engine Emissions—

Pollutants	Emission Factors ^(a)	Combined Emissions	Exhaust Concentrations
	Grams/hp-hr	U.S. tons/year	
NO _x	4.21	5.18	
CO	0.28	0.34	
SO ₂	Based on 0.05% S fuel	0.18	20.7 ppm
Particulate	0.04	0.05	0.012 g/m ³
Total HC	0.07	0.09	
(a) Supplied by vendor.			

The 336 Building is an insignificant emission unit and is not required to comply with the periodic monitoring and record keeping requirements of the Hanford Site Air Operation Permit.

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**Notice of Construction Application
for
High Bay Testing Facility (336 Building, 300 Area)**

1.0 FACILITY INFORMATION

1.1 Name of Applicant

U.S. Department of Energy (DOE), Richland Operations Office

1.2 Address And Phone Number Of Applicant And Contact Person

U.S. Department of Energy
Richland Operations Office
P.O. Box 550, MSIN A5-15
Richland, Washington 99352

Contact:

Joel B. Hebdon, Director
Environmental Compliance Division
(509) 372-3468

1.3 Function of Facility

The purpose of this facility is to perform engineering and analysis of multiphase flow experiments. Work activities include slurry transport/resuspension studies and waste tank mixing/mitigation/retrieval experiments to test mixing and transfer systems for the Waste Treatment and Immobilization Plant.

1.4 Location of Facility

The 336 Building is located on the 300 Area on the Hanford Site, approximately 4 km (2.2 miles) north of Richland, Washington, and approximately 0.16 km (0.1 miles) west of the Columbia River.

1.5 Description of Facility and Affected Emission Units

The High Bay Testing Facility (336) Building consists primarily of high bay and dry lab space with associated wet lab and office space. The diesel engines that will be used to support the work in the 336 Building will be located outside in the northeast parking lot (Figure 1).

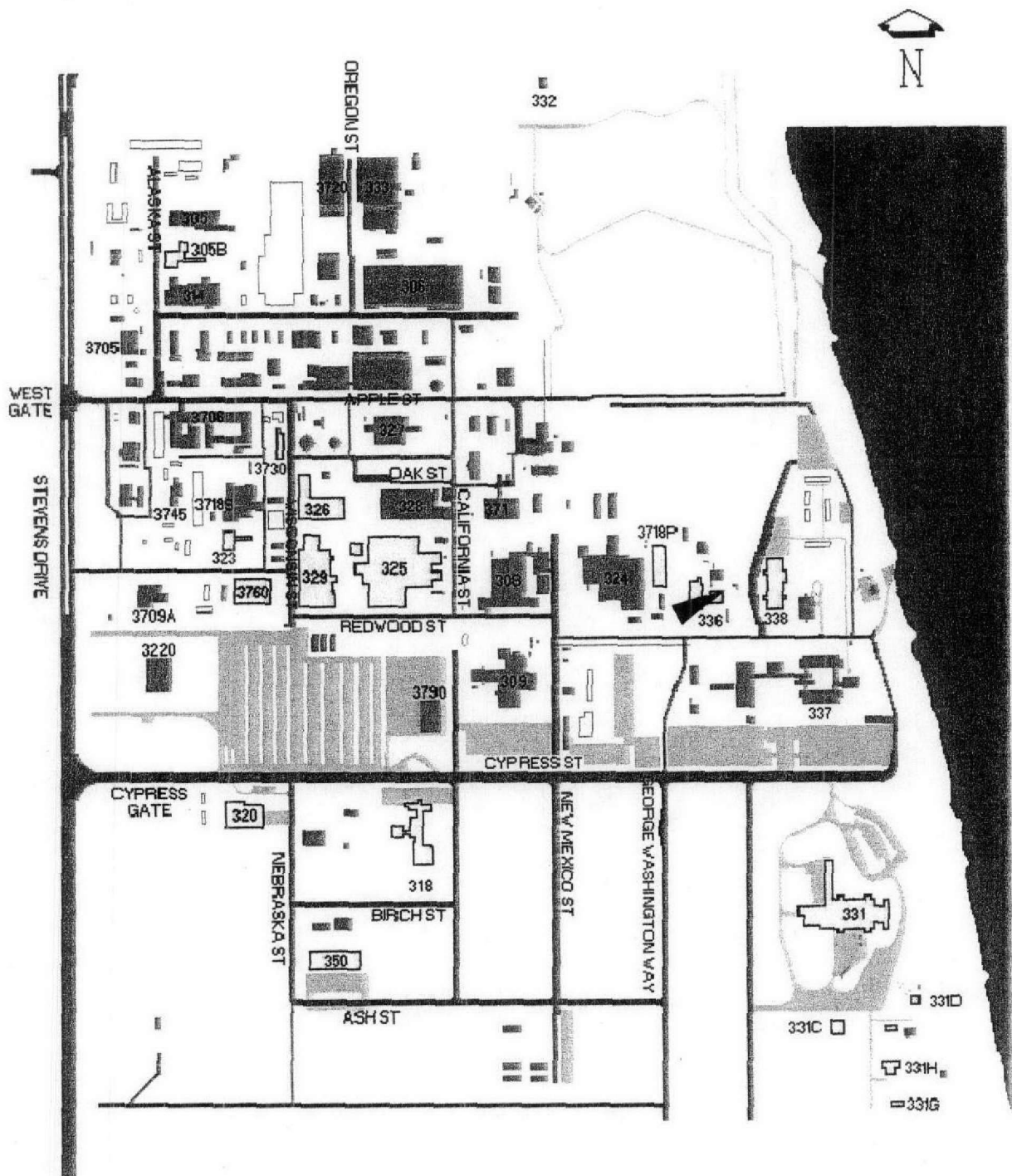


Figure 1—Location of the 336 Building, 300 Area

The 336 Building is primarily used to test mixing and transport systems of the Hanford Waste Treatment and Immobilization Plant (WTP) project. The WTP project plans to use pulse jet mixer (PJM) technology and air sparging for tank-mixing applications requiring solids suspension, fluid blending, and the release of gases generated in-situ by radiolysis and thermolysis (note: these gases will not be generated during the proposed testing). The mixers are driven via jet pumps, which use compressed air as the motive force. The compressed air is to be supplied with two rented 1600 CFM, 150 PSI air compressors. Past rentals of an air compressor

rated at this level have been driven by a 560 HP Cummins Model QSX15 C600 diesel engine. Future rentals are expected to employ similar engines.

1.6 Description of the New Source

This application requests approval to operate two diesel engines to power two 1600 CFM, 150 PSI air compressors that will be used to provide compressed air for the WTP project. Past rentals of compressors rated at this level have been driven by a 560 HP Cummins Model QSX15 C600 diesel engine, which consumes 25.6 gallons per hour at 100% load. The engines will be located outside in the 336 Building northeast parking lot.

There is a continuing need for this project at the 336 facility to aid in resolving a number of issues related to the design and operation of the PJM/hybrid mixing system for the WTP. This is a continuation of work for which temporary operation of one compressor was approved by Ecology on August 10, 2005. This notice of construction (NOC) application is to expand the scope of operation to two compressors and operation for an indefinite period. The scope of planned research involves 1) testing the mixing control system, 2) evaluating the effectiveness of the mixing system to mobilize the tank contents and strip *in situ* generated oxygen from the tank contents, and 3) providing information for evaluating plant structures in the event of PJM over blows. The results of the tests are critical for the timely completion of WTP design and construction.

2.0 NEW SOURCES CRITERIA POLLUTANT EMISSIONS

The following describes the operation of the new sources and the resulting emissions of criteria pollutants.

Two approximately 560 HP diesel engines will be used to power two 1600 CFM, 150 PSI air compressors. To estimate emissions, the specifications of the Cummins Model QSX15 C600 diesel engines have been assumed. This engine uses #2 diesel fuel with sulfur content of 0.05% or less and consumes 25.6 gallons per hour at 100% load. The engines will operate no more than a combined total of 2000 hours per year.

Emission factors for the assumed engines were supplied by the manufacturer with the exception of SO_x, are listed in Table 2.1-A.

Table 2.1-A—Diesel Engine Emission Factors Based on Vendor and EPA Data

CATERPILLAR MODEL 3406 DIESEL ENGINE EMISSION FACTORS, Grams/HP-HR*					
NO_x (as NO₂)	CO	SO_x (as SO₂)	Total HC	Particulate	Lead**
4.21	0.28	Based on 0.05% S fuel	0.07	0.04	No Data
* Supplied by manufacturer with the exception of SO _x , which is based on "Not to exceed rates" at 100% load, 25.6 gal/hr consumption of #2 diesel with 0.05 wt % sulfur.					
** No Data: Neither the vendor nor the EPA databases report emission factors for lead.					

Operation of two 560 HP diesel engines with the above emission factors for 1000 hours each per year would result in the criteria pollutant emissions shown in Table 2.1-B.

Table 2.1-B—Total Diesel Engine Emissions

	NO _x (as NO ₂)	CO	SO _x (as SO ₂)	Total HC	Particulate
U. S. Tons/year					
Diesel Engine #1	2.59	0.17	0.09	0.043	0.025
Diesel Engine #2	2.59	0.17	0.09	0.043	0.025
Total	5.18	0.34	0.18	0.09	0.05

3.0 NEW SOURCE TOXIC AIR POLLUTANT EMISSIONS

This section describes the toxic air pollutant (TAP) emissions from the diesel engines described in Section 2. Table 3.1 shows emissions from each diesel generator and the combined emissions. The emissions are based on emission factors in *Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition, Volume 1: Stationary Point and Area Sources, Chapter 3 Stationary Internal Combustion Sources*.

Table 3.1—TAP Emissions from Diesel Engines

Pollutant	CAS #	Diesel Engine #1 ^a		Diesel Engine #2 ^a		Total Emissions ^b	
		lbs/yr	lbs/hr	lbs/yr	lbs/hr	lbs/yr	lbs/hr
1,3-Butadiene	106-99-0	1.41E-01	1.41E-04	1.41E-01	1.41E-04	2.82E-01	2.82E-04
Acetaldehyde	75-07-0	2.76E+00	2.76E-03	2.76E+00	2.76E-03	5.52E+00	5.52E-03
Acrolein	107-02-8	3.33E-01	3.33E-04	3.33E-01	3.33E-04	6.66E-01	6.66E-04
Benzene	71-43-2	3.36E+00	3.36E-03	3.36E+00	3.36E-03	6.72E+00	6.72E-03
Formaldehyde	50-00-0	4.25E+00	4.25E-03	4.25E+00	4.25E-03	8.50E+00	8.50E-03
Naphthalene	91-20-3	3.05E-01	3.05E-04	3.05E-01	3.05E-04	6.10E-01	6.10E-04
o-Xylene	1330-20-7	1.03E+00	1.03E-03	1.03E+00	1.03E-03	2.06E+00	2.06E-03
Toluene	108-88-3	1.47E+00	1.47E-03	1.47E+00	1.47E-03	2.94E+00	2.94E-03
PAHs		1.24E-02	1.24E-05	1.24E-02	1.24E-05	2.48E-02	2.48E-05

^a Fuel use @ 25.6 gal/hr, operating 1000 hrs/yr.

^b Fuel use @ 25.6 gal/hr, operating 2000 hrs/yr.

The emissions for each TAP are compared with an applicable small quantity emissions rate (SQER) found in WAC 173-460 *Controls for New Sources of Toxic Air Pollutants*. For the Class A TAPs without a SQER (those with an acceptable source impact level (ASIL) below 0.001 µg/m³), the ambient air concentrations were calculated using the Breeze ISC GIS Pro dispersion model and compared directly to their ASILs.

Table 3.2 shows that the total TAPs emissions are below the applicable SQERs or ASILs.

Table 3.2—Comparison of TAP Emissions to SQERs

Comparison to SQERs							
Pollutant	CAS #	Annual SQERs			Hourly SQERs		
		Total	SQER	Percent of SQER	Total	SQER	Percent of SQER
		lbs/yr	lbs/yr		lbs/hr	lbs/hr	
1,3-Butadiene	106-99-0	2.82E-01	5.00E-01	56%	2.82E-04	N/A	N/A
Acetaldehyde	75-07-0	5.52E+00	5.00E+01	11%	5.52E-03	N/A	N/A
Acrolein	107-02-8	6.66E-01	1.75E+02	0.4%	6.66E-04	2.00E-02	3.3%
Benzene	71-43-2	6.72E+00	2.00E+01	34%	6.72E-03	N/A	N/A
Formaldehyde	50-00-0	8.50E+00	2.00E+01	43%	8.50E-03	N/A	N/A
Naphthalene	91-20-3	6.10E-01	2.27E+04	<0.1%	6.10E-04	2.60E+00	<0.1%
o-Xylene	1330-20-7	2.06E+00	4.37E+04	<0.1%	2.06E-03	5.00E+00	<0.1%
Toluene	108-88-3	2.94E+00	4.37E+04	<0.1%	2.94E-03	5.00E+00	<0.1%
PAHs		2.48E-02	N/A		2.48E-05	N/A	N/A
Comparison to ASILs							
Pollutant	CAS #	Total lbs/yr	Total µg/m ³	ASIL µg/m ³	Percent of ASIL		
PAHs		2.48E-02	3.53E-06	4.8E-04	0.7%		

4.0 COMPLIANCE WITH APPLICABLE REQUIREMENTS

Operation of the engines will be in accordance with applicable requirements in WAC 173-400, WAC 173-401 and WAC 173-460. The subject compressor engines are not subject to any new source performance standards and maximum achievable control technology standard.

4.1 Compliance with Applicable Standards

The standards in WAC 173-400-040, "General Standards for Maximum Emissions" and WAC 173-400-050, "Emission Standards for Combustion and Incineration Units" would apply to the new emissions and emission units. New emissions shown in Table 3.2 are below applicable SQERs or ASILs found in WAC 173-460, "Controls for New Sources of Toxic Air Pollutants.

It is requested that upon approval of this application that a Minor Permit Modification to the Hanford Site Air Operating permit (00-05-006) be processed in accordance with WAC 173-401 to incorporate it into the air operating permit (AOP). Attachment A contains the Minor Permit Modification Request form, and Attachment B contains the Notification of Permit Modification Request To The U.S. Environmental Protection Agency, Region 10, The Tribes, and Affected States.

4.2 Best Available Control Technology

Best available control technology (BACT) for the diesel engines would consist of meeting the performance certification requirements of 40 CFR 89, using fuel with a sulfur content of 0.05% or less, and good operating practices.

4.3 Impact on Non Attainment Areas

Operation of the engines will not impact any nonattainment areas.

5.0 PROPOSED APPROVAL CONDITIONS

5.1 Operating Conditions

- 5.1.1 Operation of two units for a combined total of up to 2000 hours per year (not necessarily 1000 hours each).
- 5.1.2 Operation using diesel fuel with a sulfur content of 0.05 weight percent or less.
- 5.1.3 Employ BACT, consisting of operation using engines meeting the applicable emission standards in 40 CFR 89.
- 5.1.4 Operation shall meet the limits of WAC 173-400-040 and -050 as applicable.

5.2 Monitoring and Record Keeping Conditions

- 5.2.1 Hours of operation of each engine.
- 5.2.2 Vendor documentation that fuel meets Condition 5.1.2.

6.0 REFERENCES

Trinity Consultants. 2005. "Breeze ISC GIS Pro Dispersion Model, Version 5.1.0.", Dallas, Texas.

Washington Administrative Code (WAC). 2005. Washington State Department of Ecology. "General Regulations for Air Pollution Sources." WAC 173-400, Olympia, Washington.

Washington Administrative Code (WAC). 2002. Washington State Department of Ecology. "Operating Permit Regulation." WAC 173-401, Olympia, Washington.

Washington Administrative Code (WAC). 1998. Washington State Department of Ecology. "Controls for New Sources of Toxic Air Pollutants." WAC 173-460, Olympia, Washington.

7.0 ATTACHMENTS

Attachment A—Minor Permit Modification Request Form

Attachment B—Notification of Permit Modification Request To The U.S. Environmental Protection Agency, Region 10, The Tribes, and Affected States

Attachment A

MINOR PERMIT MODIFICATION REQUEST

Permit Number 00-05-006

attach the completed Notification of Permit Modification Request Form to the EPA/tribes/affected state

Minor permit modifications are allowed under WAC 173-401-725 and meet the following criteria:

- Does not violate any applicable requirement
- Does not involve significant changes to existing monitoring, reporting, or recordkeeping requirements in the permit
- Is not a Title I modification.

Provide the following information pursuant to WAC-173-401-725(2)(b)

Description of the change:

The 336 Building is listed in Appendix K of the original AOP application (DOE/RL-95-07) as an insignificant emission unit. The change requested by this NOC application is to operate two diesel engines at the 336 Building for a combined total of up to 2000 hours per year. The engines will be used to power two rented 1600 CFM, 150 PSI air compressors to provide compressed air for the tests performed in the 336 Building.

Describe the emissions resulting from the change:

New emissions:

Pollutant:	U.S. Tons/year
NO _x	5.18
CO	0.34
SO ₂	0.18
Particulate	0.05
HC	0.09

Describe the new applicable requirements that will apply as a result of the change:

Operation of the engines will be in accordance with applicable requirements in WAC 173-400, WAC 173-401 and WAC 173-460.

Suggested Draft Permit Language:

for example:

- Monitoring/PCM that will be used to support compliance determination/certification
- Description of air pollution control equipment (abatement technology)
- Other controls such as limits on inventory; process limits such as throughput, hours of operation, or acceptance criteria; or other assumptions used in potential to emit calculations
- Other process descriptions that constitute a term or condition, such as reporting or recordkeeping requirements.

Proposed approval conditions are listed below:

Operating Conditions

- Operation of two units for a combined total of up to 2000 hours (not necessarily 1000 hours each).
- Operation using diesel fuel with a sulfur content of 0.05 weight percent or less.
- Employ BACT, consisting of operation using engines meeting the applicable emission standards in 40 CFR 89.
- Operation shall meet the limits of WAC 173-400-040 and -050 as applicable.

Monitoring and Record Keeping Conditions

- Hours of operation of each engine.
- Vendor documentation that fuel has sulfur content of 0.05 weight percent or less.

CERTIFICATION

Provide certification pursuant to (WAC 173-401-725(2)(b)(iii))

I certify that based on information and belief formed after reasonable inquiry of the person or persons who perform activities, or those persons directly responsible for gathering the information, the statements and information provided in this modification request are true, accurate, and complete. I also certify that the proposed modification meets the criteria for use of minor permit modification procedures, as hereby requested.

Responsible Official:

Roby D. Enge

Title:

Director, Environment, Safety, Health & Quality

Signature:

[Handwritten Signature]

Date:

5/15/06

For Hanford Site Use Only:

AOP Change Control Number:

Date Submitted:

Attachment B**NOTIFICATION OF PERMIT MODIFICATION REQUEST TO THE U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 10,
THE TRIBES, AND AFFECTED STATES**

This form serves as notification of a request for an Air Operating Permit Modification per WAC 173-401-725(2) and (3).

Air Operating Permit Number: 00-05-006	
Source: U.S. Department of Energy, Richland Operations, Hanford Site	
Mailing Address: P.O. Box 550 Richland, WA 99352	Physical Address: 825 Jadwin Ave. Richland, WA 99352
Brief Description: The 336 Building is listed in Appendix K of the original AOP application (DOE/RL-95-07) as an insignificant emission unit. The change requested by this NOC application is to operate two diesel engines at the 336 Building for a combined total of up to 2000 hours per year. The engines will be used to power two rented 1600 CFM, 150 PSI air compressors to provide compressed air for the tests performed in the 336 Building.	
Contact Name: Joel B. Hebdon	Phone: (509) 372-3468
Title: Director, Environmental Compliance Division US Department of Energy, Richland Operations Office	
FOR ECOLOGY USE ONLY	
Application Number	Date Received
Ecology Contact	
Date of Publication in Permit Register	Public Comment Period Ends



Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

06-OD-0097

Mr. Michael Wilson, Program Manager
Nuclear Waste Program
State of Washington
Department of Ecology
3100 Port of Benton Blvd
Richland, Washington 99352

Dear Mr. Wilson:

NOTICE OF CONSTRUCTION (NOC) APPLICATION FOR OPERATION OF TWO DIESEL ENGINES AT THE HIGH BAY TESTING FACILITY (336 BUILDING), 300 AREA, HANFORD SITE AND A MINOR PERMIT MODIFICATION TO THE HANFORD SITE AIR OPERATING PERMIT (AOP) (NUMBER 00-05-006)

Enclosed for your review and approval is the NOC application for Operation of Two Diesel Engines at the High Bay Testing Facility (336 Building), 300 Area, Hanford Site. Also attached is the Minor Permit Modification Request and the Notification of Permit Modification Request to the U.S. Environmental Protection Agency (EPA), Region 10, The Tribes, and Affected States.

The NOC application request is to allow operation of the two engines at the 336 Building for a combined total of up to 2000 hours per year. The diesel engines will power two rented 1600 CFM, 150 PSI air compressors used to supply compressed air at the 336 Building to test mixing and transport systems of the Hanford Waste Treatment and Immobilization Plant project. The Minor Permit Modification Request and the Notification of Permit Modification Request to the EPA, Region 10, The Tribes, and Affected States are submitted pursuant to Washington Administrative Code 173-401-725.

If you have any questions or require additional information regarding this submittal, please contact Theresa Aldridge, Pacific Northwest Site Office, Operations Division, at (509) 372-4508 or Mary F. Jarvis, Office of Environmental Services, at (509) 376-2256.

Sincerely,

Keith A. Klein, Manager
Richland Operations Office

OD:TLA

Enclosure

Mr. M. Wilson
06-OD-0097

-2-

cc w/encl:

B.P. Atencio, PNNL
E. G. Damberg, PNNL
C.J. Duchsherer, PNNL
Environmental Portal, LMSI
S. Harris, CTUIR
D. Hendrickson, Ecology
A.K. Ikenberry, PNNL
R. Jim, YN
-K.A. Peterson, FH
D. Powaukee, NPT
R. K. Woodruff, PNNL
D. Zhen, EPA

bcc:

T.L. Aldridge, PNSO, w/attach.

R.M. Carosino, OCC, w/attach.

R.L. Higgins, PNSO, w/attach.

M.F. Jarvis, OES, w/attach.

R. M. Leach, PNSO, w/o attach.

C.S. Thurlow, RCA, w/attach.

RCA Official File, w/attach.

AMI Rdg File

RCA Rdg File

Pacific Northwest National Laboratory

Operated by Battelle for the
U.S. Department of Energy

May 15, 2006

Mr. Joel B. Hebdon
Director, Environmental Services Division
Richland Operations Office
U.S. Department of Energy
825 Jadwin, A6-33
Richland, Washington 99352

Dear Mr. Hebdon:

NOTICE OF CONSTRUCTION APPLICATION FOR OPERATION OF TWO DIESEL ENGINES AT THE HIGH BAY TESTING FACILITY (336 BUILDING)

Attached for your review and subsequent transmittal to the Washington State Department of Ecology is a Notice of Construction Application (NOCA) for a proposed new source of criteria and toxic air pollutant emissions. The NOCA requests approval to operate two diesel engines at the 336 Building for a combined total of up to 2000 hours per year.

The diesel engines will power two rented 1600 CFM, 150 PSI air compressors used to supply compressed air for tank-mixing applications and transport systems testing of the Hanford Waste Treatment and Immobilization Plant (WTP) project. Operation of the engines will meet applicable emission standards, which include the Washington Administrative Code (WAC) 173-400-040, *General Standards for Maximum Emissions* and WAC 173-400-050, *Emission Standards for Combustion and Incineration Units*.

If you have any questions or require any additional information regarding this submittal, please contact Ms. Cheryl Duchsherer at 373-0594 or Mr. Rodger Woodruff at 373-6396.

Sincerely,



Roby D. Enge, Director
Environment, Safety, Health and Quality

RDE/CJD/vjg

Attachment

cc: Theresa L. Aldridge, PNSO
Terry L. Davis, PNSO
Ron L. Higgins, PNSO
Mary F. Jarvis, RL
Genice Madrid, PNSO

902 Battelle Boulevard • P.O. Box 999 • Richland, WA 99352

Mr. Joel B. Hebdon
May 15, 2006
Page 2

bcc: Brad P. Atencio
Steve D. Cooke
Eric G. Dainberg
Cheryl J. Duchsherer
Alice K. Ikenberry
Dean E. Kurath
Curtis J. Nichols
Rodger K. Woodruff
EM RIDS #T2.2.1
File/LB

Battelle

The Business of Innovation

Project No.

Date May 31, 2006

To Roby Enge

From CJ Duchsherer

Subject NOTICE OF CONSTRUCTION APPLICATION AND
MINOR PERMIT MODIFICATION TO THE
HANFORD SITE AIR OPERATING PERMIT (AOP)
FOR THE OPERATION OF TWO DIESEL ENGINES
AT THE HIGH BAY TESTING FACILITY (336
BUILDING)

Internal Distribution cc:

BP Atencio

AI Chandia

SD Cooke

CJ Duchsherer

EG Damberg

DE Kurath

AK Ikenberry

CJ Nichols

RK Woodruff

File/LB

Attached for your review and concurrence is a letter submitting the Notice of Construction Application (NOCA) to the Washington State Department of Ecology for a proposed new source of criteria and toxic air pollutant emissions at the 336 Building. Also attached is the Minor Permit Modification to the Hanford Site Air Operating permit (00-05-006) form to be processed in accordance with WAC 173-401.

BACKGROUND

The 336 Building is primarily used to test mixing and transport systems of the Hanford Waste Treatment and Immobilization Plant (WTP) project. The WTP project plans to use pulse jet mixer (PJM) technology and air sparging for tank-mixing applications requiring solids suspension, fluid blending, and the release of gases generated in-situ by radiolysis and thermolysis (note: these gases will not be generated during the proposed testing). The mixers are driven via jet pumps, which use compressed air as the motive force. The compressed air is to be supplied with two rented 1600 CFM, 150 PSI air compressors. Past rentals of an air compressor rated at this level have been driven by a 560 HP Cummins Model QSX15 C600 diesel engine. Future rentals are expected to employ similar engines.

DISCUSSION

The NOCA requests approval to operate two diesel engines at the 336 Building for a combined total of up to 2000 hours per year. The two diesel engines will power two 1600 CFM, 150 PSI air compressors that will be used to provide compressed air for the WTP project. Emission estimates have been calculated assuming that the emission factors for future rentals with similar engines will be the same as for the prior rental. The calculated emissions from both engines combined, and the exhaust concentrations regulated under WAC 173-400-50(1), are shown in Table S.1.

Table S.1 Diesel Engine Emissions—

Pollutants	Emission Factors ^(a)	Combined Emissions	Exhaust Concentrations
	Grams/hp-hr	U.S. tons/year	
NO _x	4.21	5.18	
CO	0.28	0.34	
SO ₂	Based on 0.05% S fuel	0.18	20.7 ppm
Particulate	0.04	0.05	0.012 g/m ³
Total HC	0.07	0.09	

^(a) Supplied by vendor.

Operation of the engines will meet applicable emission standards, which include the WAC 173-400-040, "General Standards for Maximum Emissions" and WAC 173-400-050, "Emission Standards for Combustion and Incineration Units". Best available control technology (BACT) will be met by using compressors with engines meeting the requirements of 40 CFR 89.

Attachment A contains the Minor Permit Modification Request form, and Attachment B contains the Notification of Permit Modification Request To The U.S. Environmental Protection Agency, Region 10, The Tribes, and Affected States. It is requested that upon approval of this application that a Minor Permit Modification to the Hanford Site Air Operating permit (00-05-006) be processed in accordance with WAC 173-401 to incorporate it into the air operating permit (AOP).

CONCURRENCE

The staff members listed on internal distribution for this memo provided concurrence of the information presented in the revision form. Concurrence signatures are included on the attached transmittal letter within the concurrence packet. Copies of this report have been provided to and discussed with Ms. Theresa Aldridge, PNSO.

ISSUES

None specific to this report.

RECOMMENDATION

Sign the letter submitting the NOCA and the Minor Permit Modification to the Hanford Site Air Operating permit (00-05-006) form and return to Effluent Management group, in order to coordinate submittal to Ecology.